



SAW Components

SAW Rx filter

WCDMA Band 26 / Band 5

Series/Type:	B8825
Ordering code:	B39871B8825P810
Date:	June 19, 2014
Version:	2.0



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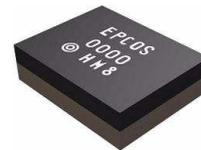
876.5/881.5 MHz

Data Sheet

SMD

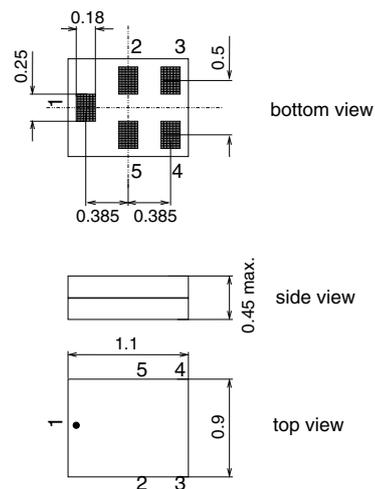
Application

- Low-loss RF filter for mobile telephone WCDMA Band 26 & 5 system, receive path (Rx)
- Suitable for diversity applications
- Impedance 50 ohm input and output
- Unbalanced to unbalanced operation
- Usable passband 35 MHz



Features

- Package size 1.1 x 0.9 mm²
- Maximum package height 0.45 mm
- RoHS compatible
- Approx. weight 0.001g
- Package for Surface Mount Technology (SMT)
- Ni, gold-plated terminals
- **Electrostatic Sensitive Device (ESD)**
- **Moisture Sensitivity Level 3**



Pin configuration

- 1 Input, unbalanced
- 4 Output, unbalanced
- 2,3,5 To be grounded

Please read *cautions and warnings and important notes* at the end of this document.



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Characteristics

Temperature range for specification: $T = -30\text{ °C to }+90\text{ °C}$
 Terminating source impedance: $Z_S = 50\ \Omega + 1.5\text{nH}$
 Terminating load impedance: $Z_L = 50\ \Omega + 1.5\text{nH}$

				B8825			
				min.	typ. @ 25°C	max.	
Centre Frequency		f_C B26		—	876.5	—	
		f_C B5		—	881.5	—	
Maximum insertion attenuation							
	859.0 ... 894.0	MHz	α_{max}	—	1.8	3.0	dB
	@ $f_{Carrier}$ B26 RX 861.4 ... 891.6	MHz	α_{WCDMA} ¹⁾	—	1.8	2.3	dB
	869.0 ... 894.0	MHz	α_{max}	—	1.8	2.8	dB
	@ $f_{Carrier}$ B5 RX 871.4 ... 891.6	MHz	α_{WCDMA} ¹⁾	—	1.8	2.2	dB
Amplitude ripple (p-p)							
	859.0 ... 894.0	MHz	$\Delta\alpha$	—	0.9	2.0	dB
	869.0 ... 894.0	MHz		—	0.9	1.8	
Error Vector Magnitude ²⁾							
	@ $f_{Carrier}$ B26 RX 861.4 ... 891.6	MHz	EVM	—	2.9	7.0	%
	@ $f_{Carrier}$ B5 RX 871.4 ... 891.6	MHz	EVM	—	1.9	5.0	%
Input VSWR							
	859.0 ... 894.0	MHz		—	1.9	2.2	
	869.0 ... 894.0	MHz		—	1.6	2.0	
Output VSWR							
	859.0 ... 894.0	MHz		—	2.0	2.2	
	869.0 ... 894.0	MHz		—	1.6	2.0	
Attenuation							
			α				
	10.0 ... 447.0	MHz		53	56	—	dB
	814.0 ... 849.0	MHz		46	52	—	dB
	@ $f_{Carrier}$ 814.0 ... 846.6	MHz	α_{WCDMA} ¹⁾	46	50	—	dB
	849.0 ... 854.0	MHz		2	16	—	dB
	909.0 ... 979.0	MHz		15	22	—	dB
	979.0 ... 6000.0	MHz		26	38	—	dB
	1710.0 ... 1785.0	MHz		42	48	—	dB
	1850.0 ... 1915.0	MHz		40	46	—	dB
	1920.0 ... 1980.0	MHz		40	45	—	dB
	2400.0 ... 2500.0	MHz		37	42	—	dB
	2577.0 ... 2682.0	MHz		36	40	—	dB
	4900.0 ... 5950.0	MHz		35	39	—	dB

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- 1) Attenuation of WCDMA signal (“Powertransferfunction”, α_{WCDMA}) is determined by

$$\int_{-\infty}^{\infty} |S_{\text{ds21}}(f) H_{\text{RRC}}(f - f_{\text{Carrier}})|^2 df$$

f_{Carrier} according to 3GPP TS 25.101 (e.g. for band 26 RX passband, f_{Carrier} ranges from 861.4 MHz (lowest Rx channel) to 891.6 MHz (highest Rx channel)). $H_{\text{RRC}}(f)$ is the transfer function of the root-raised cosine transmit pulse shaping filter according to 3GPP TS 25.101 with the following normalization:

$$\int_{-\infty}^{\infty} |H_{\text{RRC}}(f)|^2 df = 1$$

- 2) Error Vector Magnitude (EVM) based on definition given in 3GPP TS 25.141.

Maximum ratings

Storage temperature range	T_{stg}	-40/+85 ¹⁾	°C	Machine Model
DC voltage	V_{DC}	5 ²⁾	V	
ESD voltage	V_{ESD}	100 ³⁾	V	
Input power at Tx band 814.0 ... 849.0 MHz	P_{IN}	TBD	dBm	Continuous Wave @ 55°C 2000h

- 1) extended upper limit: 168h @ 125°C acc. to IEC 60068-2-2 Bb.
 2) 168h Damp Heat Steady State acc. to IEC60068-2-67 Cy.
 3) acc. to JESD22-A115B (MM - Machine Model), 10 negative & 10 positive pulses.



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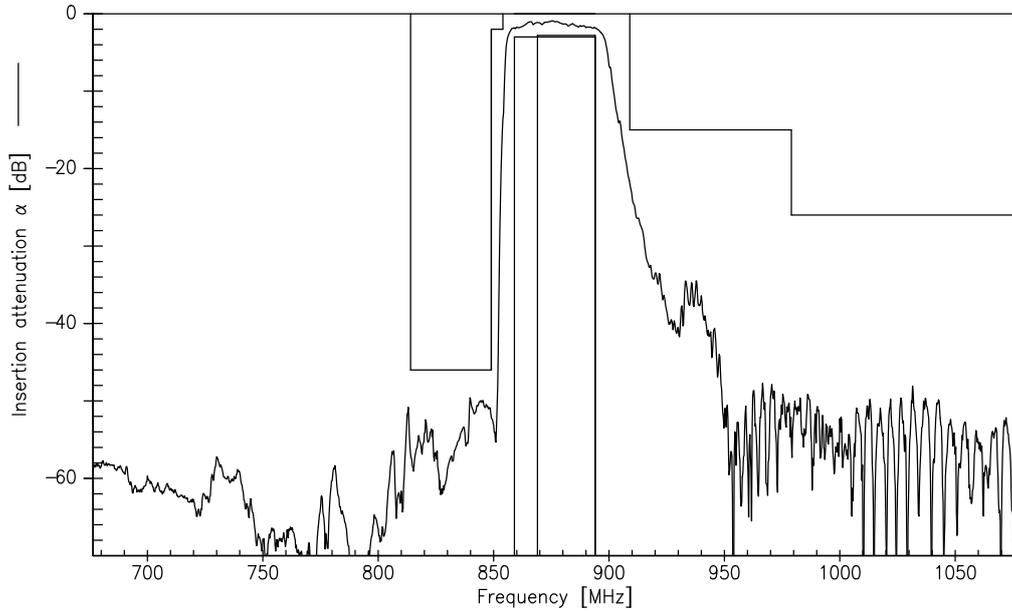
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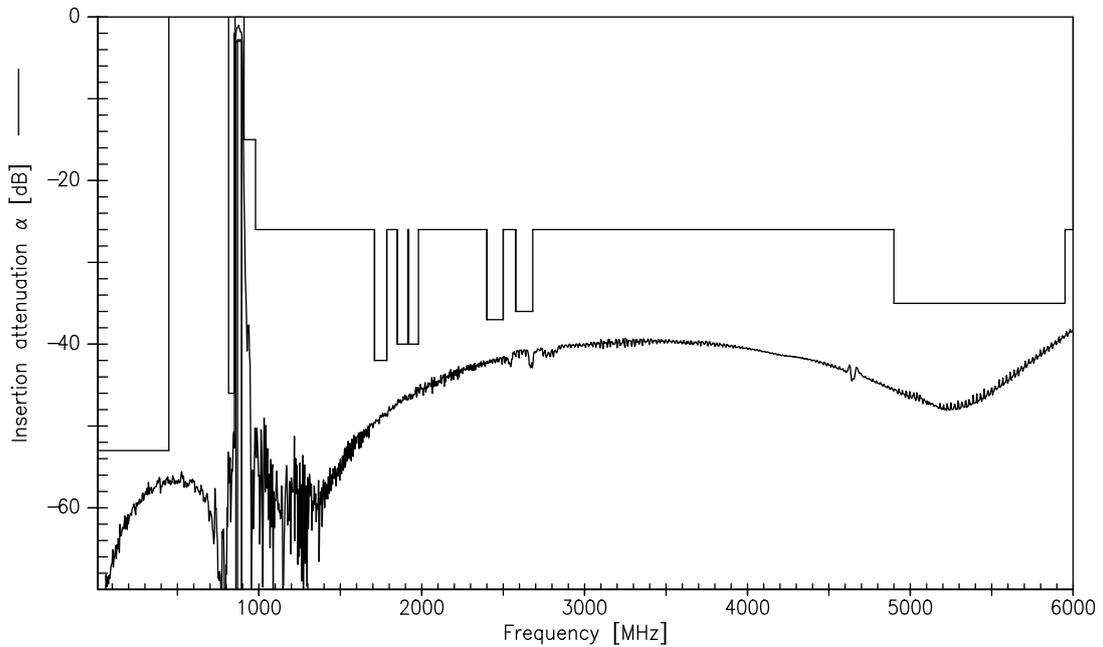
Data Sheet

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Transfer function (narrowband)



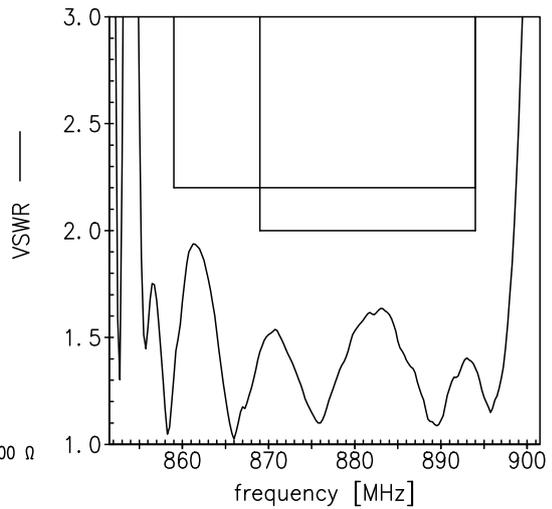
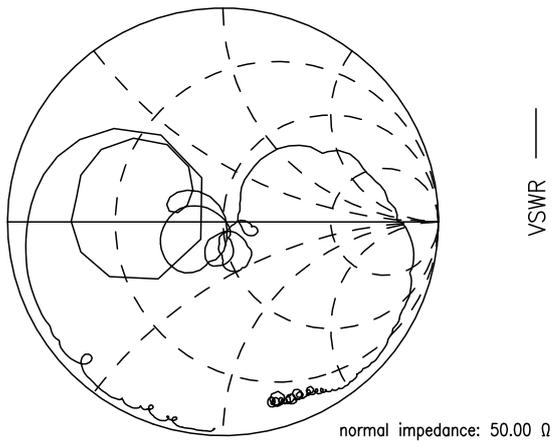
Transfer function (wideband)



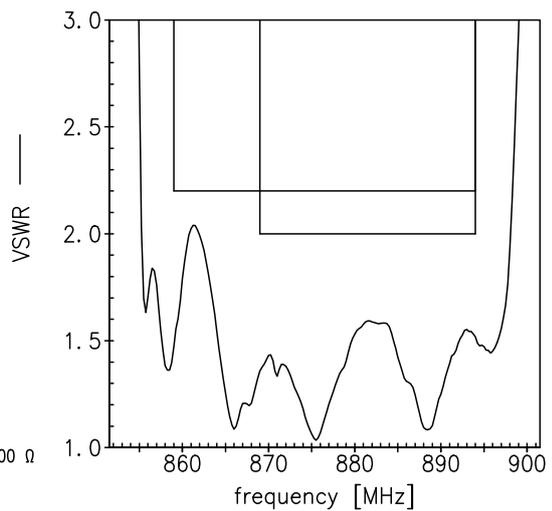
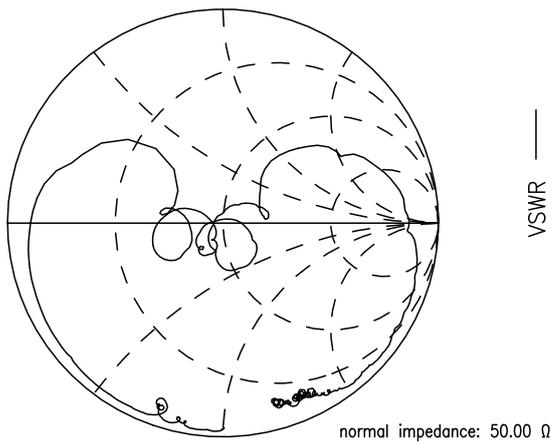
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Smith charts

S_{11} function



S_{22} function





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References

Type	B8825
Ordering code	B39871B8825P810
Marking and package	C61157-A8-A56
Packaging	F61074-V8255-Z000
Date codes	L_1126
S-parameters	B8825_NB.s2p, B8825_WB.s2p see file header for port/pin assignment table
Soldering profile	S_6001
RoHS compatible	ROHS-compatible means that products are compatible with the requirements according to Art. 4 (substance restrictions) of Directive 2011/65/EU of the European Parliament and of the Council of June 8th, 2011, on the restriction of the use of certain hazardous substances in electrical and electronic equipment ("Directive") with due regard to the application of exemptions as per Annex III of the Directive in certain cases.
Moldability	Before using in overmolding environment, please contact your EPCOS sales office.
Matching coils	See Inductor pdf-catalog http://www.tdk.co.jp/tefe02/coil.htm#aname1 and Data Library for circuit simulation http://www.tdk.co.jp/etvcl/index.htm

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Please read *cautions and warnings and important notes* at the end of this document.



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